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to aggravate poverty. A number of illustrative diagrams increase the effectiveness of the presentation. Otherwise the book contains but little that is new or original in character. The author would break the circles through the use of legislation, voluntary organization, and individual effort. G.B.M.

MANTON, H. *The case for the guardians of the poor.* (London: Poor-Law Publications, 27-29 Furnival St. 1918. Pp. 59.)

MILLER, L. D. *The New York charities directory; a reference book of social service in or available for Greater New York.* Twenty-seventh edition. (New York: Charity Organization Society. 1918.)

Socialism and Co-operative Enterprises

NEW BOOKS

LARKIN, W. P. *Marxian socialism.* (London: King. 1918. 6d.)

MITCHELL, H. *Profit-sharing and producers' coöperation in Canada.* Bull. no. 26. (Kingston, Ont.: Dept. Hist., Queen's Univ. 1918.)

PEASE, M. *Jean Jaurès, socialist and humanitarian.* (New York: Huebsch. 1917. Pp. 157.)

VANDERVELDE, E. *Le socialisme contre l'Etat problèmes d'après guerre.* (Paris: Berger-Levrault. 1918. 3.60 fr.)

WATON, H. *The fetishism of liberty.* (New York: Marxian Philosophical Society. 1918. Pp. 101.)

Report on government ownership of public utility service undertakings, prepared by the committee on municipal ownership of the City Club of Los Angeles, California. (Los Angeles: City Club. 1917. Pp. 38. 10c.)

The German socialists. Do they stand for a democratic peace? Will they revolt? (Greenwich, Conn.: William E. Walling. 1918. Pp. 15.)

Seven articles which have been published in fifty American newspapers.

Statistics and Its Methods

Statistics. By WILLIAM B. BAILEY and JOHN CUMMINGS. National Social Science Series. (Chicago: A. C. McClurg and Company. 1917. Pp. 147. 60 cents.)

An Introduction to Statistical Methods. By HORACE SECRIST. (New York: The Macmillan Company. 1917. Pp. xxi, 482. \$2.00.)

The need for a satisfactory elementary manual of statistical methods has long been manifest. The publication of two such volumes within a single month consequently is of interest. For-

tunately the two are of such different character that there would seem to be a place for each. Unfortunately the two will not fill their respective places with equal satisfaction.

The small (16 mo.) volume by Drs. Bailey and Cummings is designed particularly for "social workers [who] must keep records and prepare reports," and for those persons who "find it necessary to gather primary statistical facts, plan tables, tabulate the raw material and present it to the public in such shape that it can be used for intelligent analysis and comparison." Given this underlying purpose, it is natural that the book should deal less extensively with the methods of critical analysis than with the problems of collection, tabulation, and initial presentation of statistical data. With this plan there can be no quarrel: for a host of workers must have felt the want of a satisfactory manual dealing with the collection and organization of statistical material.

A number of the chapters of this little book are admirable attempts to fill this want so far as is possible within small compass. There are several excellent compact summaries. It would be difficult to find a more satisfactory brief statement of the *desiderata* of good statistical schedules. Nowhere is there a more helpful discussion of the purposes of schedule editing. The chapter on tabulation is replete with suggestions which are sure to prove useful to the novice in statistical inquiry. It would be fortunate indeed if the remainder of the book maintained the standard set by the treatment of these topics.

As a matter of fact, the book "runs down" badly. In the later chapters the fatal blunder is made of ignoring the conditions imposed upon the exposition by the diminutive size of the volume. Nothing was to be gained by sections upon the geometric mean, deviation from the average, and stereograms, or even by a whole chapter upon correlation, when lack of space absolutely forbade any adequate explanation of these statistical concepts. It is difficult to see why Drs. Bailey and Cummings should have attempted to place in the hands of the novice all the arms of the statistical arsenal. There are occasions when directions should take the form of, "Do not handle." In the wisdom of their experience the authors should have contented themselves with thorough explanations of a few of the simpler instruments of statistical analysis. In neglecting to discriminate and to eliminate, they have made their treatment of analysis as distinct a failure as their exposition of collection and tabulation is a success.

Professor Secrist's book is of an entirely different order. Intended as a "textbook for college students [and] a manual for statisticians and business executives," it deals more comprehensively with all phases of statistical method. After an introductory chapter on the meaning and application of statistics, the details of the process of assembling and collecting statistical data are explained. Chapters follow on Tabular, Diagrammatic, and Graphic Presentation; and finally upon Averages, Index Numbers, Dispersion, and Correlation.

There need be no hesitation in stating that Professor Secrist has written the best-balanced book in English on statistical methods as related to economic investigation. No important steps in the collection, tabulation, presentation, and critical analysis of statistical data are omitted. Not only are the proportions of the book excellent, but there is throughout that unfailing reiteration of the difficulties and the limitations of statistical method which should mark every text in this field. Frequent introductory and summary paragraphs keep the student continuously in touch with the development of the subject. A brief list of well chosen references at the close of each chapter adds to the usefulness of the volume. In general, the book has been carefully constructed.

The weaknesses of the work are twofold: (1) an occasional unfortunate pedantry or ponderousness in style; (2) defective distinctions between different phases of statistical method. The former defect perhaps will not prove serious. The explanation of statistical tables as "flat surfaces 'with breadth not disproportionately small in comparison with length'" (p. 117) does not serve to illumine the subject; and the discussion of the "tendencies of beginners" (pp. 4-6) is so exhaustive as to be wearisome. But the book contains so much effective concrete illustrative material that such occasional lapses as the above may well be pardoned.

The other weakness is more serious; for Professor Secrist's classifications determine the course of his exposition. Thus, in developing the subject of presentation, Professor Secrist divides his material into two chapters, one entitled Diagrammatic Presentation, the other Graphic Presentation. The attempted distinction between curves (or "graphs") and other graphic forms has little to commend it. It is counter to the established usage. Furthermore, it leads to unfortunate divisions of material. To separate the treatment of the frequency histogram and the frequency polygon on the ground that one is a "diagram" and the other a

"graph" obviously would be unfortunate. Again, time data may be represented by either bars or curves; now one is preferable, now the other. Professor Secrist would separate the description of the two forms. It is to be hoped that this practice of his will not be generally adopted.

More fundamentally Professor Secrist fails in his endeavor to classify the different cases in statistical analysis. Thus statistical tables are classified as: (a) historical; (b) "cross-section"; (c) frequency. Elsewhere the three essential distinctions are spoken of as: (a) time; (b) "condition"; (c) space. The matter is not clear. Nor does it play a large enough part in the exposition.

Statistical method serves its purpose primarily in the comparison and analysis of significant variations. These variations are of three sorts: (a) variations immediately related to time; (b) variations immediately related to space; (c) variations immediately related to neither time nor space. These three fundamental cases condition all statistical analysis, and individually necessitate adjustments and modifications in the instruments of analysis. The significance of an average of a time series is essentially different from that of a frequency distribution. The coefficient of correlation which will truthfully measure the connection between two variables indifferent to time and space, will actually misrepresent the connection or lack of connection between two variables in time unless modified in some such way as by the "method of differences." Statistical analysis has not recognized these facts sufficiently. Their importance cannot be exaggerated. In the opinion of the reviewer, no thoroughly satisfactory text will be written on statistical methods until the explanation of the various statistical devices—tables, graphs, averages, coefficients—is subordinated to the development of these three fundamental cases in analysis, rather than the reverse as is now the uniform practice. Professor Secrist has moved in the right direction; he has not gone far enough.

But there is no occasion for belittling Professor Secrist's accomplishment. His illustrative chapters on wage statistics and index numbers are admirable; his discussion of correlation is in refreshing contrast to the typical discussion of that subject. His book as a whole is by far the best American text in its field. It is certain to prove of great service to all students of statistical methods as applied to economics.

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